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Hydrological Memorandum No. 6

FREQUENCY of DAILY RAINFALL AMOUNTS in Northern Ireland

84095

K.E.Woodley
(Meteorological Office, Belfast)

The daily rainfall totals at selected rainfall observing stations in Northern Ireland over the 35-year period, 1916 to 1950 inclusive, have been analysed to show the number of days in that period upon which the rainfall total reached or exceeded prescribed limits. Cumulative frequency tables of falls of rain of R_D inches or more are given for each of the calendar months and for the period as a whole. In addition, the number of days when rainfall totalled .004 inch or less is shown, and it should be noted that these entries include completely rainless days. It is not possible to show the frequency of rainless days, for the procedure for recording "traces" of rainfall (i.e. up to and including .004 inch) was not standardised for the whole period at all of the stations.

2. The term "rainfall" includes all forms of precipitation, e.g. rain, drizzle, sleet, hail, snow, and may also include a few instances arising from the collection in the raingauge of heavy dew or melted hoar frost, but in general these latter types of observation will have been within the masked "trace" category (see para.1).

3. The daily totals upon which this paper has been based are the rainfall amounts recorded in the 24-hour period ending at 9 a.m. G.M.T. The frequencies, particularly of heavier and more significant falls, will tend to be on the low side as no account has been taken of falls within a 24-hour period which straddled the observation time of 9 a.m.

4. These tables summarise at 0.1 in. intervals basic frequency tables (where results were originally at 0.01 in. intervals) produced by machine using data punched on cards, and are given for the following stations, the site details of which are given in the heading of the appropriate table:

ARMAGH observatory
BALLYMENA, Harryville
BELFAST, Sewage works
LONDONDERRY, Creggan Reservoir
OMAGH, Edenfel
SEAFORDE
SION MILLS

Meteorological Office,
Tyrone House,
Ormeau Avenue,
BELFAST, 2.

SEP 1962
No dup 3A

A R M A G H

(Observatory)

Grid Ref. ..... iH(23)878458
Altitude ..... 205 ft.
Station No. 95-947815

County ..... Armagh
Basin ..... BANN
Tributaries .... Callan-Blackwater-L. Neagh

R_D (inches)*	Jan	Feb	Mar	Apr	May	Jun	Jly	Aug	Sep	Oct	Nov	Dec	All Months
2.50	o	o	o	o	o	o	o	o	o	o	o	o	o
2.40	o	o	o	o	o	o	o	o	o	o	o	o	o
2.30	o	o	o	o	o	o	o	o	o	o	o	o	o
2.20	o	o	o	o	o	o	o	o	o	o	o	o	o
2.10	o	o	o	o	o	o	o	o	o	1	o	o	1
2.00	o	o	o	o	o	o	o	o	o	1	o	o	1
1.90	o	o	o	o	o	o	o	o	o	1	o	o	1
1.80	o	o	o	o	o	o	o	o	o	1	o	o	1
1.70	o	o	o	o	o	o	o	o	o	1	o	o	1
1.60	o	o	o	o	1	o	o	2	o	1	o	o	4
1.50	o	o	o	o	1	o	o	3	1	1	o	o	6
1.40	o	o	o	o	1	o	o	3	1	1	o	o	6
1.30	o	1	o	o	1	o	2	4	1	1	o	o	10
1.20	o	1	o	1	1	o	2	7	1	2	1	1	17
1.10	o	2	2	1	1	1	2	7	4	4	2	3	29
1.00	o	2	2	2	2	1	6	8	6	8	3	5	45
.90	3	3	2	2	2	4	11	10	7	13	6	7	70
.80	7	4	4	3	3	5	13	11	10	17	9	8	94
.70	12	4	7	6	6	6	31	16	19	22	15	15	159
.60	21	9	11	9	12	11	42	30	29	32	21	24	251
.50	41	17	19	17	23	22	49	42	43	48	32	38	391
.40	63	36	29	31	39	47	77	72	66	76	62	58	656
.30	118	67	60	58	83	87	115	126	103	122	107	97	1143
.20	211	126	106	116	151	150	193	208	162	202	180	183	1988
.10	366	275	223	255	272	282	340	352	310	354	317	360	3706
.005	742	618	594	597	600	571	688	697	635	708	700	763	7913
$\leq .004$†	343	371	491	453	485	479	397	388	415	377	350	322	4871
Total No. of days	1085	989	1085	1050	1085	1050	1085	1085	1050	1085	1050	1085	12784

*Values of R_D obtained from tabulations in millimetres and tenths, and converted to nearest .01 inch.

†Including rainless days.

B A L L Y M E N A

(Harryville)

Grid Ref. ..... iD(34) 107028
Altitude ..... 150 ft.
Station No. 97-953210

County ..... Antrim
Basin ..... BANN
Tributaries .... Braid-Main-L.Neagh

R_D (inches)	Jan	Feb	Mar	Apr	May	Jun	Jly	Aug	Sep	Oct	Nov	Dec	All Months
2.50	0	0	0	0	0	0	0	0	0	0	0	0	0
2.40	0	0	0	0	0	0	0	0	0	0	0	0	0
2.30	0	0	0	0	0	0	0	0	0	0	0	0	0
2.20	0	0	0	0	0	0	0	0	0	0	0	0	0
2.10	0	0	0	0	0	0	0	0	0	0	0	0	0
2.00	0	0	0	0	0	0	0	0	0	0	0	0	0
1.90	0	0	0	0	0	0	0	0	0	0	0	1	1
1.80	0	0	0	0	0	0	0	0	0	0	0	1	1
1.70	0	0	0	0	0	0	0	0	1	1	1	1	4
1.60	0	0	0	0	0	0	1	0	1	2	1	1	6
1.50	0	0	0	1	0	0	2	2	3	3	1	2	14
1.40	0	0	0	1	1	0	2	2	5	4	2	3	20
1.30	1	1	0	1	1	1	3	2	5	5	3	3	26
1.20	2	1	2	1	1	1	5	2	7	7	3	4	36
1.10	2	1	2	1	3	1	6	6	7	9	4	4	46
1.00	4	2	4	3	5	2	9	9	8	12	6	7	71
.90	7	2	4	5	6	3	10	13	10	12	9	11	92
.80	10	3	6	6	7	6	13	13	14	20	14	14	126
.70	20	6	7	9	15	9	26	25	27	26	18	22	210
.60	39	10	13	18	27	18	46	44	42	52	33	35	377
.50	53	24	21	26	32	30	68	68	67	84	44	54	571
.40	100	43	39	47	60	61	101	103	105	123	81	88	951
.30	162	97	83	85	108	102	154	156	149	179	154	161	1590
.20	285	194	163	167	192	176	238	262	237	277	262	285	2738
.10	477	355	311	330	341	318	402	410	386	440	437	482	4689
.005	816	659	634	617	594	590	702	720	693	766	764	836	8391
$\leqslant$.004*	269	330	451	433	491	460	383	365	357	319	286	249	4393
Total No. of days	1085	989	1085	1050	1085	1050	1085	1085	1050	1085	1050	1085	12784

*Including rainless days.

B E L F A S T

(Sewage Works)

Grid Ref. ..... iJ(33) 352770

Altitude ..... 26 ft.

Station No. 97-968133

County ..... Antrim

Basin ..... COASTAL: Woodburn to Lagan

R_D (inches)	Jan	Feb	Mar	Apr	May	Jun	Jly	Aug	Sep	Oct	Nov	Dec	All Months
2.50	o	o	o	o	o	o	o	o	o	o	o	o	o
2.40	o	o	o	o	o	o	o	o	o	o	o	o	o
2.30	o	o	o	o	o	o	o	o	o	o	o	o	o
2.20	o	o	o	o	o	o	o	o	o	o	o	o	o
2.10	o	o	o	o	o	o	o	o	o	o	o	o	o
2.00	o	o	o	o	1	o	o	o	1	o	1	o	3
1.90	o	o	1	o	1	o	o	o	1	1	1	o	5
1.80	o	o	1	o	1	o	o	o	1	2	1	o	6
1.70	o	o	1	o	1	o	1	o	1	2	1	o	7
1.60	o	o	1	o	1	o	1	2	2	2	1	o	10
1.50	o	o	1	o	1	o	1	2	2	3	1	1	12
1.40	1	1	1	o	1	1	1	3	3	4	2	2	20
1.30	2	1	1	o	1	1	2	3	4	8	2	2	27
1.20	3	2	1	o	3	1	3	7	9	10	2	3	44
1.10	6	4	1	o	4	2	5	8	10	14	2	8	64
1.00	7	5	3	1	6	4	8	11	13	17	6	11	92
.90	10	6	8	3	8	5	14	14	18	23	11	15	135
.80	20	8	10	7	10	9	21	24	21	32	16	23	201
.70	34	11	15	13	17	13	29	35	34	46	28	31	306
.60	53	22	24	18	24	22	43	56	48	58	48	49	465
.50	78	38	32	30	32	39	57	76	71	84	69	76	682
.40	115	70	48	54	61	67	91	98	95	140	110	111	1060
.30	168	116	79	85	101	111	140	150	133	185	163	171	1602
.20	291	185	138	162	170	177	221	224	203	255	257	280	2563
.10	439	344	275	299	293	296	353	372	336	394	394	439	4234
.005	732	572	519	547	526	518	605	614	598	660	651	724	7266
$\leq$ .004*	353	417	566	503	559	532	480	471	452	425	399	361	5518
Total No. of days	1085	989	1085	1050	1085	1050	1085	1085	1050	1085	1050	1085	12784

*Including rainless days.

C R E G G A N R E S E R V O I R

(Londonderry)

Grid Ref. ..... iC(24) 415171
Altitude ..... 325 ft.
Station No. 98-925349

County ..... Londonderry
Basin ..... COASTAL: Boundary to Foyle

R_D (inches)	Jan	Feb	Mar	Apr	May	Jun	Jly	Aug	Sep	Oct	Nov	Dec	All Months
2.50	0	0	0	0	0	0	0	0	0	0	0	0	0
2.40	0	0	0	0	0	0	0	0	0	0	0	0	0
2.30	0	0	0	0	0	0	0	0	0	0	0	0	0
2.20	0	0	0	0	0	0	0	1	0	0	0	0	1
2.10	0	0	0	0	0	0	0	1	1	0	0	1	3
2.00	0	0	0	0	0	0	0	1	1	0	0	1	3
1.90	0	0	0	0	0	0	0	1	1	0	0	1	3
1.80	0	0	0	0	0	0	1	1	1	0	0	1	4
1.70	0	0	0	0	0	0	1	2	1	1	0	1	6
1.60	0	0	0	0	0	0	1	2	1	1	0	1	6
1.50	0	0	0	0	0	0	1	3	1	1	0	1	7
1.40	0	0	2	0	0	0	1	3	1	2	0	1	10
1.30	0	0	2	0	1	0	3	4	2	3	1	1	17
1.20	1	1	2	0	1	2	5	7	3	4	2	2	30
1.10	3	1	3	0	1	5	6	7	7	4	3	3	43
1.00	3	1	5	2	2	8	10	7	13	10	4	4	69
.90	9	3	6	4	3	9	12	12	16	13	7	8	102
.80	14	5	7	8	8	13	15	21	24	18	15	10	158
.70	18	10	10	14	11	24	25	29	32	24	20	21	238
.60	32	18	15	20	19	30	43	48	49	43	37	35	389
.50	58	33	23	30	27	44	65	60	72	70	65	56	603
.40	98	60	47	49	49	62	109	102	108	119	103	97	1003
.30	169	99	89	95	96	114	159	168	165	200	177	169	1700
.20	292	196	166	180	180	191	255	262	268	321	292	316	2919
.10	532	400	321	358	330	355	430	441	429	502	458	519	5075
.005	893	763	779	759	720	709	813	833	826	881	870	918	9764
$\leqslant$ .004*	192	226	306	291	365	341	272	252	224	204	180	167	3020
Total No. of days	1085	989	1085	1050	1085	1050	1085	1085	1050	1085	1050	1085	12784

*Including rainless days.

O M A G H

(Edenfel)

Grid Ref. ..... iH(23) 464719
Altitude ..... 280 ft.
Station No. 99-927679

County ..... Tyrone
Basin ..... FOYLE
Tributary ..... Drumragh

R_D (inches)	Jan	Feb	Mar	Apr	May	Jun	Jly	Aug	Sep	Oct	Nov	Dec	All Months
2.50	o	o	o	o	o	o	o	o	o	o	o	o	o
2.40	o	o	o	o	o	o	o	o	o	o	o	o	o
2.30	o	o	o	o	o	o	o	o	o	o	o	o	o
2.20	o	o	o	o	o	o	o	1	o	o	o	o	1
2.10	o	o	o	o	o	o	o	1	o	o	o	o	1
2.00	o	o	o	o	o	o	o	1	o	o	o	o	1
1.90	o	o	o	o	o	o	o	1	o	o	o	o	1
1.80	o	o	o	o	o	o	1	1	o	o	o	o	2
1.70	o	o	o	o	o	o	1	1	o	o	o	o	2
1.60	o	o	o	o	o	o	1	1	o	o	1	o	3
1.50	o	1	o	o	o	o	1	2	o	2	2	o	8
1.40	o	1	o	o	o	o	1	2	2	2	2	1	11
1.30	1	2	o	o	o	o	1	3	2	5	2	1	17
1.20	1	2	1	o	1	1	1	6	4	9	3	3	32
1.10	2	4	3	1	1	2	5	7	7	9	5	3	49
1.00	3	4	4	2	3	4	8	10	8	11	8	5	70
.90	6	6	7	4	5	5	13	14	14	14	10	8	106
.80	12	9	9	6	7	7	17	19	21	15	15	10	147
.70	23	17	11	7	13	11	26	26	31	33	26	25	249
.60	40	26	12	9	19	19	38	39	42	46	37	39	366
.50	65	39	21	23	32	33	49	64	69	72	62	71	600
.40	100	63	46	45	58	57	78	110	98	114	106	117	992
.30	172	103	91	83	107	105	146	163	144	176	178	192	1660
.20	302	211	168	168	188	182	242	245	233	273	282	304	2798
.10	471	373	324	307	314	321	389	411	390	450	431	468	4649
.005	814	669	657	659	626	594	719	722	712	777	757	822	8528
$\leq$ .004*	271	320	428	391	459	456	366	363	338	308	293	263	4256
Total No. of days	1085	989	1085	1050	1085	1050	1085	1085	1050	1085	1050	1085	12784

*Including rainless days.

S E A F O R D E

Grid Ref. ..... iJ(33) 402435
Altitude ..... 180 ft.
Station No. 96-974499

County ..... Down
Basin ..... COASTAL: Quoile to Boundary

R_D (inches)	Jan	Feb	Mar	Apr	May	Jun	Jly	Aug	Sep	Oct	Nov	Dec	All Months
2.50	o	o	o	o	o	o	o	o	o	o	o	o	o
2.40	o	o	o	o	o	o	o	o	o	o	o	o	o
2.30	o	o	o	o	o	o	1	o	o	o	o	o	1
2.20	o	o	o	o	o	o	1	o	o	o	o	o	1
2.10	o	o	o	o	1	o	1	o	o	o	o	o	2
2.00	o	o	o	o	1	o	1	o	2	o	1	o	5
1.90	o	o	o	o	1	o	2	o	2	o	1	o	6
1.80	o	o	o	o	2	1	2	o	3	o	1	o	9
1.70	o	o	o	o	2	1	2	o	4	o	1	o	10
1.60	1	o	o	o	3	1	2	o	6	1	1	o	15
1.50	1	o	1	1	3	2	2	o	6	3	3	o	22
1.40	1	o	2	1	5	4	3	1	8	5	5	1	36
1.30	3	1	3	2	5	4	5	3	11	8	5	2	52
1.20	6	1	4	2	5	4	7	6	13	14	8	7	77
1.10	10	3	5	2	10	4	8	8	16	18	10	14	108
1.00	13	3	6	4	11	4	12	11	19	21	13	23	140
.90	19	4	10	5	12	7	17	17	21	24	17	26	179
.80	28	4	11	6	18	9	22	25	27	33	23	36	242
.70	43	14	15	11	24	13	27	33	36	45	40	49	350
.60	62	24	27	15	29	19	44	44	45	60	59	60	488
.50	85	46	36	33	40	29	58	65	62	80	83	78	695
.40	120	77	59	48	64	50	90	92	87	103	115	113	1018
.30	186	111	103	84	102	82	139	137	121	147	154	177	1543
.20	246	179	159	149	175	155	206	218	194	214	228	254	2377
.10	400	293	271	285	291	282	339	350	322	357	356	393	3939
.005	721	568	545	543	534	493	649	649	621	673	653	719	7368
$\leqslant$ .004*	364	421	540	507	551	557	436	436	429	412	397	366	5416
Total No. of days	1085	989	1085	1050	1085	1050	1085	1085	1050	1085	1050	1085	12784

* Including rainless days.

S I O N M I L L S

Grid Ref. ..... iH(23) 339932
Altitude ..... 100 ft.
Station No. 99-932500

County ..... Tyrone
Basin ..... FOYLE

R_D (inches)	Jan	Feb	Mar	Apr	May	Jun	Jly	Aug	Sep	Oct	Nov	Dec	All Months
2.50	o	o	o	o	o	o	o	o	o	o	o	o	o
2.40	o	o	o	o	o	o	o	o	o	o	o	o	o
2.30	o	o	o	o	o	o	o	o	o	o	o	o	o
2.20	o	o	o	o	o	o	o	o	o	o	o	o	o
2.10	o	o	o	o	o	o	o	o	1	o	o	o	1
2.00	o	o	o	o	o	o	o	o	1	o	o	o	1
1.90	o	o	o	o	o	o	o	o	1	o	o	o	1
1.80	o	o	o	o	o	o	o	o	1	o	o	o	1
1.70	o	o	o	o	o	o	1	1	2	o	o	o	4
1.60	o	o	o	o	o	o	1	2	2	o	o	o	5
1.50	o	o	o	o	o	o	1	2	2	o	o	1	6
1.40	o	o	o	o	o	o	2	2	3	o	o	1	8
1.30	o	o	o	o	o	o	2	2	3	1	1	2	11
1.20	o	o	1	o	o	1	2	3	5	3	1	2	18
1.10	1	o	1	o	o	1	3	4	5	6	2	3	26
1.00	3	o	2	o	2	2	3	9	8	11	5	4	49
.90	5	o	4	1	5	3	8	15	10	12	8	8	79
.80	9	2	8	3	6	4	17	20	14	15	12	10	120
.70	17	8	11	5	12	11	26	29	27	22	24	19	211
.60	38	18	15	12	15	17	36	35	41	42	36	28	333
.50	58	30	24	20	26	29	54	57	58	69	53	57	535
.40	104	64	43	41	48	52	78	97	92	115	102	115	951
.30	182	109	81	69	91	104	138	149	141	177	183	185	1609
.20	300	196	173	164	171	167	236	236	233	300	298	298	2772
.10	507	374	320	328	321	313	392	400	410	474	452	476	4767
.005	821	663	622	626	581	593	704	693	697	770	758	813	8341
$\leqslant$.004*	264	326	463	424	504	457	381	392	353	315	292	272	4443
Total No. of days	1085	989	1085	1050	1085	1050	1085	1085	1050	1085	1050	1085	12784

* Including rainless days.

Monthly and Annual Average General Rainfall 1916-1950

MONTHS	ENGLAND mm	WALES mm	ISLE OF MAN mm	SCOTLAND mm	NORTHERN IRELAND mm	ENGLAND AND WALES mm	GREAT BRITAIN mm	UNITED KINGDOM mm
January	83	149	140	154	109	92	112	112
February	60	105	87	106	76	66	80	80
March	52	85	79	89	66	57	68	68
April	57	~~84~~ 82	73	88	67	60	70	70
May	59	86	79	87	72	63	72	72
June	52	79	77	87	71	55	66	66
July	75	106	86	114	96	79	92	92
August	75	116	105	122	102	81	95	95
September	69	114	115	128	96	76	93	93
October	83	~~147~~ 148	141	158	111	92	114	114
November	88	145	132	143	104	95	113	113
December	79	142	136	143	111	88	106	106
YEAR	832	1357	1250	1419	1081	904	1081	1081
AREA (Sq. miles)*	50327	8017	221	30411	5459	58344	88755	94214
Km2	130297	20756	572	78734	14133	151053	229787	243920

* From "Britain, 1964", Central Office of Information (HMSO)